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10/775,479	02/10/2004	William D. Wigger	RSW920030306US1	1039

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EXAMINER
ARMOUCHE, HADI S

ART UNIT	PAPER NUMBER
2132	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>10 February 2004</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-43</u> is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) <u>43</u> is/are allowed.

6)☒ Claim(s) <u>1-7,10-19,21-26,28-31 and 35-41</u> is/are rejected.

7)☐ Claim(s) <u>8-9,20,27,32-34,42</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>10 February 2004</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some * c)☐ None of:

         1.☐ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____.

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>2/10/2004</u>.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1.   Applicant is reminded of the proper language and format for an abstract of the
disclosure.

The abstract should be in narrative form and generally limited to a single
paragraph on a separate sheet within the range of 50 to 150 words. It is important that
the abstract not exceed 150 words in length since the space provided for the abstract
on the computer tape used by the printer is limited. The form and legal phraseology
often used in patent claims, such as "means" and "said," should be avoided. The
abstract should describe the disclosure sufficiently to assist readers in deciding whether
there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information
given in the title. It should avoid using phrases which can be implied, such as, "The
disclosure concerns," "The disclosure defined by this invention," "The disclosure
describes," etc.

2.   The abstract of the disclosure is objected to because legal phraseology is used.

For example: "prior art" and "disclosed". Correction is required. See MPEP

§ 608.01(b).

3.   The specification is objected to as failing to provide proper antecedent basis for

the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP 608.01(o). The

specification does not define the computer-usable medium claimed in claims 21 and 30

and the means for structure of claim 43.

Claim Objections

4.   Claims 33 and 35 are objected under 37 CFR 1.75(c) because of the following

informalities: claim 33 does not refer to a preceding claim. It currently depends on claim

34. For the purpose of examination, examiner assumed it depends on claim 32.

Similarly for claim 35. For the purpose of examination, examiner assumed it depends on

claim 30 instead of 36 as currently stated. Appropriate correction is required.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6.   Claims 1-2, 10-12, 21-22 and 30-31 are rejected under 35 U.S.C. 102(b) as

being anticipated by Chopra et al. (US 6,631,466) referred to hereinafter by Chopra.

7.   Regarding claim 1, Chopra teaches *a method for creating a plurality of arrays*

from a numbered list data set, the method comprising:

    installing a program on a computer (packet filtering application) [col 3 lines15-

17]*;*

        wherein the program performs steps comprising:

            assigning an ID to a numbered list [col 5 lines 40-59 and col 11 lines 18-

23]*;*

                creating the arrays [col 10 lines 7-42]*;*

                performing a Boolean OR operation on the ID and an array value [col 25

lines 24-33 and fig 7a element 740]*; and*

wherein the computer can determine whether an incoming numbered list is

present in the numbered list data set by analyzing the arrays [col 19 line 17-col 20 line

62].

8.   The method of claim 10 has the same limitation as the method of claim 1 and

hence same rejection rational is applied. Additional limitations include *setting a counter*

equal to an array value with an index equal to the number [col 9 lines 50-64].

9.   The method of claim 12 has the same limitation as the method of claim 1 and

hence same rejection rational is applied. Additional limitations include *performing a*

Boolean AND operation to generate a result [Fig 7b element 796].

10.   The programs of claim 21 and 30 have the same limitation as the method of

claim 1 and hence same rejection rational is applied. Additional limitations include *a*

computer-usable medium (SRAM) [col 15 line 52].

11.   Regarding claim 2, Chopra teaches that *the computer is a firewall* [col 3 lines 37-

67].

12.   The method of claim 11 and the programs of claim 22 and 31 have the same

limitation as the method of claim 2 and hence same rejection rational is applied.

Claim Rejections - 35 USC § 103

13.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

14.   Claims 3-6, 23-25, 28 and 41 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Chopra in view of McAuley et al., " Fast routing table lookup using

CAMs", Networking: Foundation for the future, IEEE Computer and Communications

Societies, volume 3, pages 1382-1391, April 1993, referred to hereinafter by McAuley.

15.   Regarding claim 3, Chopra teaches that *the program performs steps further*

comprising:

        obtaining the numbered list data set comprising a plurality of the numbered lists

[col 5 lines 40-67]*;*

        However, Chopra does not explicitly teach that *the numbered lists comprise a*

plurality of numbers separated by decimals. McAuley teaches that *the numbered lists*

comprise a plurality of numbers separated by decimals [page 1384 table 2]*.*

        At the time of the invention, it would have been obvious to an ordinary skill in the

art to combine McAuley's teachings with Chopra's method. The motivation/suggestion

would have been to follow the IANA (Internet Assigned Numbers Authority) standard

and the kampai addressing [McAuley, page 1384, left column, 2nd paragraph].

16.   The program of claims 23 and 35 have the same limitations as the method of

claim 3 and hence same rejection rational is applied.

17.   Regarding claim 4, McAuley teaches that *the IDs are sequentially increasing*

powers of two [page 1384, right column, 1st paragraph]*.*

18.   The program of claim 24 has the same limitations as the method of claim 4 and

hence same rejection rational is applied.

19.   Regarding claim 5, Chopra teaches that *the quantity of arrays equals the quantity of numbers in the numbered lists* [figure 4a].

20.   The program of claim 25 has the same limitations as the method of claim 5 and hence same rejection rational is applied.

21.   Regarding claim 6, Chopra teaches that *the arrays are MAXV fields long, MAXV being the maximum value of any number in the numbered lists or the incoming numbered list* [col 6 lines 27-33].

22.   Regarding claim 28, McAuley teaches *translating a binary hashtable value into a hexadecimal array value or a decimal array value* [table 2].

23.   The program of claim 41 has the same limitations as claim 28 and hence same rejection rational is applied.

24.   Claims 7, 26, 29 and 38-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chopra in view of McAuley in further in view of Decasper et al. "Router Plugins: A software Architecture for Next-Generation Routers", IEEE/ACM Transactions on Networking, Volume 8, Issue 1, Feb 2000 pages 2-15, referred to hereinafter by Decasper.

25.   Regarding claim 7, the combined teachings of Chopra and McAuley do not explicitly teach *responsive to the determination that the number is not the wildcard, translating the ID for the numbered list containing the number into a binary ID and responsive to the determination that the number is not the wildcard, translating the array value with an index equal to the number for the array associated with the number into a*

binary array value Wildcards [Chopra, col 26 lines 2-3]. However, Decasper teaches

that *the program performs steps further comprising:*

> *responsive to the determination that the number is not the wildcard, translating*
>
> *the ID for the numbered list containing the number into a binary ID and responsive to*
>
> *the determination that the number is not the wildcard, translating the array value with*
>
> *an index equal to the number for the array associated with the number into a binary*
>
> *array value* [Decasper, page 9 section A-page 10 right column 2nd paragraph].

At the time of the invention, it would have been obvious to an ordinary skill in the

art to combine Decasper's teachings with the combined method of Chopra and

McAuley. The motivation/suggestion would have been to have an efficient filer table

implementation [Decasper, page 9, section A, first paragraph].

26.   The program of claim 26 has the same limitations as the method of claim 7 and

hence same rejection rational is applied.

27.   Regarding claim 29, Decasper teaches that *the hashtable does not contain any*

zero values [page 9 table 1].

28.   Regarding claim 17, McAuley teaches that *the program performs steps further*

comprising: responsive to the determination that the number is not the first number in

the incoming numbered list, performing steps comprising: translating the counter into a

binary counter; translating the array value with the index equal to the number into a

binary array value; and translating the result into a hexadecimal result or a decimal

result [table 2]*.*

29.   Regarding claim 18, Decasper teaches that *the quantity of ones present in the binary counter indicates the location of the match between the incoming numbered list and the numbered list data set* [page 9 table 1].

30.   The program of claim 38 has the same limitations as claim 18 and hence same rejection rational is applied.

31.   Regarding claim 19, Decasper teaches that *the location of ones present in the binary version of the counter indicates the number of times the incoming numbered list is present in the numbered list data set* [page 9 table 1 and page 9 section A-page 10 right column 2nd paragraph].

32.   The program of claim 39 has the same limitations as claim 19 and hence same rejection rational is applied.

33.   Claims 13-16, 36-37 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chopra in view of Decasper.

34.   Regarding claim 13, Decasper teaches that *the program performs steps further comprising: determining whether the counter is equal to zero; and responsive to the determination that the counter is equal to zero, indicating that the incoming numbered list is not present in the numbered list data set* [page 9 table 1 and page 9 section A-page 10 right column 2nd paragraph].

35.   The program of claim 36 has the same limitations as the method of claim 13 and hence same rejection rational is applied.

36.   Regarding claim 14, Decasper teaches that *the program performs steps further comprising: responsive to the determination that the counter is not equal to zero,*

indicating that the incoming numbered list is present in the numbered list data set [page

9 table 1 and page 9 section A-page 10 right column 2nd paragraph].

37.   The program of claim 37 has the same limitations as the method of claim 14 and

hence same rejection rational is applied.

38.   Regarding claim 15, Decasper teaches that *the program performs steps further*

comprising: obtaining the incoming numbered list; and obtaining a plurality of numbered

list data set arrays [page 9 table 1].

39.   The program of claim 40 has the same limitations as claim 15 and hence same

rejection rational is applied.

40.   Regarding claim 16, Decasper teaches that *the incoming numbered list*

comprises a plurality of the numbers separated by decimals [page 9 table 1].

Allowable Subject Matter

41.   Claims 8-9, 20, 27, 32-34 and 42 are objected to as being dependent upon a

rejected base claim, but would be allowable if rewritten in independent form including all

of the limitations of the base claim and any intervening claims.

42.   The following is a statement of reasons for the indication of allowable subject

matter:

43.   none of the prior art of record alone or combination teach *determining whether*

one of the numbers is a wildcard; responsive to the determination that the number is the

wildcard, translating the ID for the numbered list containing the number into the binary

ID and responsive to the determination that the number is the wildcard, translating a

plurality of the array values for the array associated with the number into a plurality of

the binary array values.

44.   Claim 9 is allowable by virtue of its dependency to claim 8.

45.   Claim 20, 27 and 32-34, 42 have the same limitations as claim 8 and hence is

objected to for the same reason.

46.   The apparatus of claim 43 has limitations of claim 8 and hence is allowed to for

the same reason.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HADI ARMOUCHE whose telephone number is (571)270-3618. The examiner can normally be reached on M-Th 7:30-5:00 and Fridays half day.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on (571) 272-3799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. A./
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